AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing Of Claims:

1. (Currently Amended): A method of monitoring the location of a mining vehicle in a mine, the method comprising:

driving at least one mining vehicle during one work cycle at least in a first work area, in a second work area, and in a ~~second~~ third work area of the mine, wherein the first work area and the third work area are [[is]] provided with at least one identifier whose location is accurately known, and the second work area is provided with no identifier whose location is accurately known;

determining data on the location of the mining vehicle in the mine;

transferring said location data to a mine control system;

employing, in location data transfer, a data communication connection communicating with the mine control system;

employing the obtained location data in the mine control system for monitoring the operation of the mining vehicle,

determining the location of the mining vehicle substantially continuously in the first work area, the second work area, and the ~~second~~ third work area on the basis of a dead reckoning, wherein the distance travelled is calculated and the travel direction is determined;

determining, when operating in the second work area, the location of the mining vehicle only on the basis of the dead reckoning;

identifying, when operating in the first work area or the third work area, at least one identifier whose location is accurately known;

determining the location data of the mining vehicle on the basis of the identification data;

and updating the location data determined in the dead reckoning on the basis of the location data of the identifier only when driving in the first work area or the third work area, ~~wherein the second work area is one selected from the group consisting of:~~

~~a mining area separate from the first work area; and~~

~~a section of a mining area that also contains the first work area,~~ wherein the size of the second work area is sufficient to cause a mining vehicle passing from the first work area through the second work area to the third work area ~~working in that mining area~~ to have discontinuities in location updates obtained by identifiers with accurately known locations.

2. (Currently Amended):   A method as claimed in claim 1, comprising:

arranging at least one readable identifier in a predetermined location in the first work area or the third work area,

assigning the location data of the identifier in advance to a control unit in the mining vehicle,

reading the identifier with at least one reading device in the mining vehicle,

and determining the location of the mining vehicle in the first work area or the third work area on the basis of the location data of the identifier, and updating the location data obtained on the basis of the dead reckoning.

3. (Currently Amended): A method as claimed in claim 1, comprising:

arranging at least one readable identifier in a predetermined location in the first work area

or the third work area,

assigning the location data of the identifier of the identifier in advance to a control unit in

the mining vehicle,

reading the identifier with at least one reading device in the mining vehicle,

determining the location of the mining vehicle in the first work ~~areas~~ area or the third

work area on the basis of the location data of the identifier, and updating the location data

obtained on the basis of the dead reckoning,

and, reading a visual identifier arranged in the first work area or the third work area for

determining the location of the mining vehicle.

4. (Currently Amended): A method as claimed in claim 1, comprising:

arranging at least one readable identifier in a predetermined location in the first work area

or the third work area,

assigning the location data of the identifier in advance to a control unit in the mining

vehicle,

reading the identifier with at least one reading device in the mining vehicle,

determining the location of the mining vehicle in the first work area or the third work

area on the basis of the location data of the identifier, and updating the location data obtained on

the basis of the dead reckoning,

arranging at least one identifier comprising a receiver in the first work area or the third

work area,

transmitting a signal for reading the identifier from a transmitter in the mining vehicle

when driving in the first work area or the third work area,

and determining the location of the identifier read as the location of the mining vehicle.

5. (Currently Amended): A method as claimed in claim 1, comprising:

arranging at least one transmitter that transmits a signal in a predetermined location in the

first work area or the third work area,

receiving the signal by means of the data transfer unit in the mining vehicle when in the

coverage area of the transmitter,

and determining the location of the mining vehicle on the basis of the signal and updating

the location data obtained on the basis of the dead reckoning.

6. (Currently Amended): A method as claimed in claim 1, comprising:

creating a wireless network comprising a plurality of base stations placed in

predetermined locations in the first work area or the third work area,

and determining the location of the mining vehicle in the first work area or the third work

area by positioning carried out in the wireless network and updating the location data obtained

on the basis of the dead reckoning.

7. (Currently Amended): A method as claimed in claim 1, comprising:

driving the mining vehicle, suitable for transporting, in accordance with a work cycle,

driving the mining vehicle from [[an]] a first unloading area to a loading area,

loading cargo into the mining vehicle in the loading area,

driving the loaded mining vehicle from the loading area to [[the]] a second unloading

area,

unloading the cargo of the mining vehicle in the second unloading area,

determining the location of the mining vehicle in the loading area only on the basis of the

dead reckoning,

and determining the location of the mining vehicle in the unloading [[area]] areas both on

the basis of the dead reckoning and by reading at least one identifier arranged in the unloading

area.

8. (Currently Amended):   A system for monitoring the location of a mining vehicle in a

mine, the system comprising:

a first work area, [[and]] a second work area, and a third work area in the mine, in which

areas the mining vehicle is arranged to drive during one work cycle, and wherein the first work

area and the third work area are [[is]] provided with at least one identifier whose location is

accurately known, and the second work area is provided with no identifier whose-location-is

accurately-known;

at least one measuring device for determining the distance travelled by the mining

vehicle, and further at least one measuring device for determining the direction of the mining

vehicle;

a mine control system;

at least one control unit arranged in the mining vehicle;

at least one data transfer connection for data transfer between the control unit of the

mining vehicle and the mine control system;

~~wherein the second work area is one selected from the group consisting of:~~

~~a mining area separate from the first work area; and~~

~~a section of a mining area that also contains the first work area,~~ wherein the size of the second work area is sufficient to cause a mining vehicle <u>passing from the first work area through the second work area to the third work area</u> ~~working in that mining area~~ to have discontinuities in location updates obtained by identifiers with accurately known locations;

and in which system:

location data of the mining vehicle are arranged to be transferred via the data transfer connection from the mining vehicle to the mine control system,

the location of the mining vehicle is arranged to be determined substantially continuously in the first work area<u>, the second work area,</u> and the ~~second~~ <u>third</u> work area on the basis of a dead reckoning by taking into account the distance travelled and the direction;

the location of the mining vehicle is arranged to be determined only on the basis of the dead reckoning, when operating in the second work area;

at least one identifier whose location is known to the control unit is arranged in <u>each of</u> the first work area <u>and the third work area</u>;

the mining vehicle is arranged to identify the identifier when driving in the vicinity of the identifier in the first work area <u>or the third work area</u>;

the control unit is arranged to determine location data on the basis of the identification data;

and the control unit is arranged to update the location determined in the dead reckoning on the basis of the location data of the identifier in the first work area <u>or the third work area.</u>

9. (Currently Amended):   A system as claimed in claim 8, wherein

at least one readable identifier whose exact location is known to the mine control system

is arranged in the first work area or the third work area;

the mining vehicle comprises means for reading the identifier.

10. (Currently Amended):   A system as claimed in claim 8 wherein

the first work area or the third work area comprises at least one predetermined critical

location,

and at least one identifier is arranged in the immediate vicinity of said critical location.

11. (New): A method of monitoring the location of a mining vehicle in a mine, the

method comprising:

driving at least one mining vehicle during one work cycle at least in a first work area and

in a second work area of the mine, wherein the first work area is provided with at least one

identifier whose location is accurately known, and the second work area is provided with no

identifier;

determining data on the location of the mining vehicle in the mine;

transferring said location data to a mine control system;

employing, in location data transfer, a data communication connection communicating

with the mine control system;

employing the obtained location data in the mine control system for monitoring the

operation of the mining vehicle,

determining the location of the mining vehicle substantially continuously in the first work area and the second work area on the basis of a dead reckoning, wherein the distance travelled is calculated and the travel direction is determined;

determining, when operating in the second work area, the location of the mining vehicle only on the basis of the dead reckoning;

identifying, when operating in the first work area, at least one identifier whose location is accurately known;

determining the location data of the mining vehicle on the basis of the identification data;

and updating the location data determined in the dead reckoning on the basis of the location data of the identifier only when driving in the first work area,

wherein the size of the second work area is sufficient to cause a mining vehicle during at least one work cycle to have discontinuities in location updates obtained by identifiers with accurately known locations.

12. (New): A method as claimed in claim 11, comprising:

arranging at least one readable identifier in a predetermined location in the first work area,

assigning the location data of the identifier in advance to a control unit in the mining vehicle,

reading the identifier with at least one reading device in the mining vehicle,

and determining the location of the mining vehicle in the first work area on the basis of the location data of the identifier, and updating the location data obtained on the basis of the dead reckoning.

13. (New):   A method as claimed in claim 11, comprising:

arranging at least one readable identifier in a predetermined location in the first work

area,

assigning the location data of the identifier of the identifier in advance to a control unit in

the mining vehicle,

reading the identifier with at least one reading device in the mining vehicle,

determining the location of the mining vehicle in the first work areas on the basis of the

location data of the identifier, and updating the location data obtained on the basis of the dead

reckoning,

and, reading a visual identifier arranged in the first work area for determining the location

of the mining vehicle.

14. (New):   A method as claimed in claim 11, comprising:

arranging at least one readable identifier in a predetermined location in the first work

area,

assigning the location data of the identifier in advance to a control unit in the mining

vehicle,

reading the identifier with at least one reading device in the mining vehicle,

determining the location of the mining vehicle in the first work area on the basis of the

location data of the identifier, and updating the location data obtained on the basis of the dead

reckoning,

arranging at least one identifier comprising a receiver in the first work area,

transmitting a signal for reading the identifier from a transmitter in the mining vehicle

when driving in the first work area,

and determining the location of the identifier read as the location of the mining vehicle.

15. (New): A method as claimed in claim 11, comprising:

arranging at least one transmitter that transmits a signal in a predetermined location in the

first work area,

receiving the signal by means of the data transfer unit in the mining vehicle when in the

coverage area of the transmitter,

and determining the location of the mining vehicle on the basis of the signal and updating

the location data obtained on the basis of the dead reckoning.

16. (New): A method as claimed in claim 11, comprising:

creating a wireless network comprising a plurality of base stations placed in

predetermined locations in the first work area,

and determining the location of the mining vehicle in the first work area by positioning

carried out in the wireless network and updating the location data obtained on the basis of the

dead reckoning.

17. (New): A method as claimed in claim 11, comprising:

driving the mining vehicle, suitable for transporting, in accordance with a work cycle,

driving the mining vehicle from an unloading area to a loading area,

loading cargo into the mining vehicle in the loading area,

driving the loaded mining vehicle from the loading area to the unloading area,

unloading the cargo of the mining vehicle in the unloading area,

determining the location of the mining vehicle in the loading area only on the basis of the

dead reckoning,

and determining the location of the mining vehicle in the unloading area both on the basis

of the dead reckoning and by reading at least one identifier arranged in the unloading area.

18. (New): A system for monitoring the location of a mining vehicle in a mine, the

system comprising:

a first work area and a second work area in the mine, in which areas the mining vehicle is

arranged to drive during one work cycle, and wherein the first work area is provided with at least

one identifier whose location is accurately known, and the second work area is provided with no

identifier;

at least one measuring device for determining the distance travelled by the mining

vehicle, and further at least one measuring device for determining the direction of the mining

vehicle;

a mine control system;

at least one control unit arranged in the mining vehicle;

at least one data transfer connection for data transfer between the control unit of the

mining vehicle and the mine control system;

wherein the size of the second work area is sufficient to cause a mining vehicle during at

least one work cycle to have discontinuities in location updates obtained by identifiers with

accurately known locations;

and in which system:

location data of the mining vehicle are arranged to be transferred via the data transfer connection from the mining vehicle to the mine control system,

the location of the mining vehicle is arranged to be determined substantially continuously in the first work area and the second work area on the basis of a dead reckoning by taking into account the distance travelled and the direction;

the location of the mining vehicle is arranged to be determined only on the basis of the dead reckoning, when operating in the second work area;

at least one identifier whose location is known to the control unit is arranged in the first work area;

the mining vehicle is arranged to identify the identifier when driving in the vicinity of the identifier in the first work area;

the control unit is arranged to determine location data on the basis of the identification data;

and the control unit is arranged to update the location determined in the dead reckoning on the basis of the location data of the identifier in the first work area.

19. (New): A system as claimed in claim 18, wherein

at least one readable identifier whose exact location is known to the mine control system is arranged in the first work area;

the mining vehicle comprises means for reading the identifier.

20. (New): A system as claimed in claim 18 wherein

the first work area comprises at least one predetermined critical location,

and at least one identifier is arranged in the immediate vicinity of said critical location.